Math 11 Practice Quiz Name: Key

Do this in partners, although the real quiz (next class) will be done individually.
Pg 240 #3 and 4, modified plus some extensions. ☺

Jackson and Jillian are trying to control the number of text messages they send. They record the number they send for a 10 day period:
Jackson: 7, 20, 4, 11, 25, 6, 27, 3, 6, 18
Jillian: 2, 9, 11, 15, 8, 8, 0, 21, 16, 12

a. Determine the mean of each data set. (add and divide by #) $\overline{Jackson} = 12.7$ $\overline{Jillian} = 10.2$

b. Determine the mode of each data set. (most common) Jackson → 6 Jillian → 8

c. Determine the median of each data set. (middle)
Jackson: 3, 4, 6, 6, 7, 11, 18, 25, 25, 27 $\frac{7+11}{2} = 9$
Jillian: 0, 2, 8, 8, 9, 11, 12, 15, 16, 21 $\frac{9+11}{2} = 10$

d. Choose an interval width (use range, make sure you have between 5 and 12 intervals)

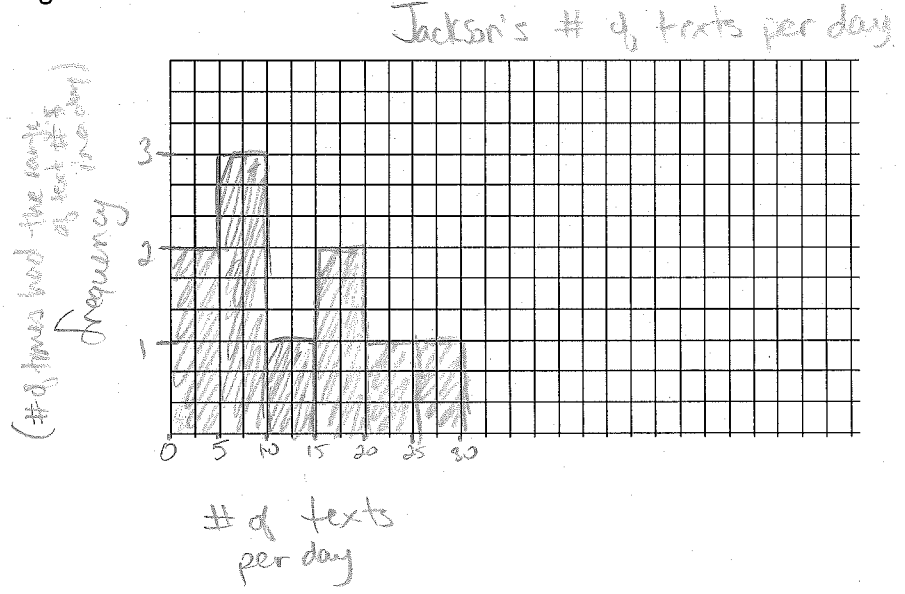
range 0–27 = 27 interval $\frac{27}{6} \rightarrow 4.5 \rightarrow 5$ ← choose 6 intervals

e. Create a frequency table for the data (you don't need to use all the lines in the table)

mid pt	Interval (# of texts per day)	Jackson	Jillian
2.5	0–5	II = 2	II = 2
7.5	6–10	III = 3	III = 3
12.5	11–15	I = 1	III = 3
17.5	16–20	II = 2	I = 1
22.5	21–25	I = 1	I = 1
27.5	26–30	I = 1	0

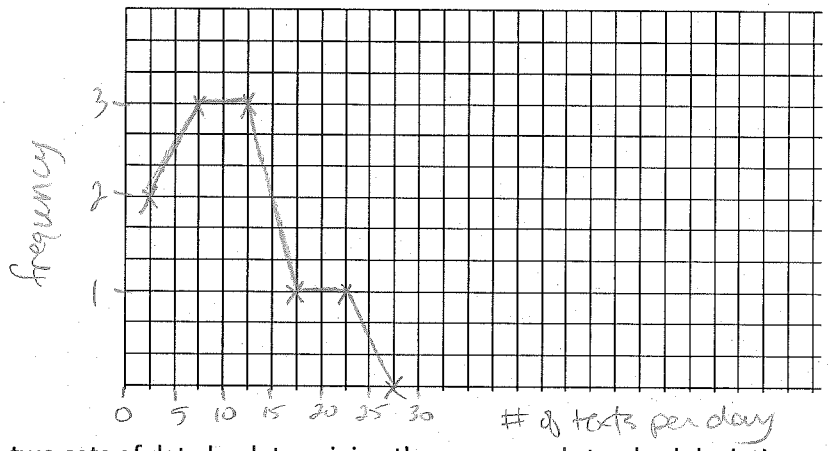
use for polygon ↑ use for histogram ↑ Jackson ↑ Jillian ↑

f. Draw a histogram of Jackson's data.



g. Draw a frequency polygon for Jillian's data.

Jillian's # of texts per day



Jillian, especially, tended to make fewer texts a day more frequently

h. Compare the two sets of data by determining the means and standard deviations.

part a

$$\sigma = \sqrt{\frac{\Sigma(x-\bar{x})^2}{n}}$$

Jackson

mean = 12.7

n = 10

x	$(x-\bar{x})^2$
7	32.49
20	53.29
4	75.69
11	2.89
25	151.29
6	44.89
27	204.49
3	94.09
6	44.89
18	28.09

$\Sigma(x-\bar{x})^2 = 732.10$

$\sigma = \sqrt{\frac{732.10}{10}}$

$= 8.56$

Jackson has more of a range of # of texts per day

Jillian

mean = 10.2

n = 10

x	$(x-\bar{x})^2$
2	67.24
9	1.44
11	0.64
15	23.04
8	4.84
8	4.84
0	104.04
21	116.64
16	33.64
12	3.24

$\Sigma(x-\bar{x})^2 = 359.60$

$\sigma = \sqrt{\frac{359.6}{10}}$

$= 6.00$

Jillian's # of texts per day is more consistent